



LA1895M

Single-Chip Tuner IC for Car Radios

Overview

The LA1895M tuner IC includes a bus interface circuit and a D/A converter circuit on chip to allow all analog circuit functional block settings to be performed in software. This means that the roughly 20 adjustment points that previously required adjustment during manufacturing can be completely eliminated, thus achieving a significant rationalization of the end product manufacturing process. At the same time this also allows all analog circuit functions to be adjusted optimally for the reception conditions. Thus this IC both rationalizes end product manufacturing and provides improved performance.

Functions

- FM front end
- Noise canceller
- MRC (multipath noise reduction circuit)
- D/A converter (for use by the microcontroller)
- FM IF
- Multiplexer
- CCB interface
- AM tuner (up-conversion AM tuner)

Features

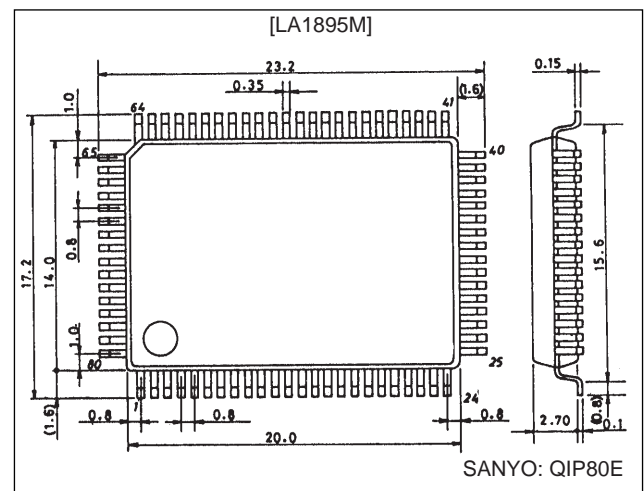
- Full microprocessor control contributes to production line rationalization, improved performance, improved reliability, and design standardization.
 - Optimal reception system: Tuner functions are controlled optimally by using a control microprocessor.
 - Automatic adjustment system: Mechanical adjustments eliminated by system developed in conjunction with the control microprocessor (LC72350). Variations due to the IC and the external components are held to 30% of previous levels.
 - Temperature guarantee system: By providing a temperature information output from the tuner chip itself and by using the arithmetic functions in the control microprocessor, this system provides temperature correction, a function that was previously difficult to implement.
 - Self-diagnosis system: Displays the failure mode.

- System development with a control microprocessor (LC72350)
- See the individual product catalog for the LC72350 Series
- Miniaturization provided by single-chip tuner IC
- Low power
- Dual-voltage power supply specifications
 - 8-V system: FM front end, AM tuner
 - 5-V system: Other signal-processing blocks
- Number of external components reduced by single-chip tuner implementation and system development.
- Support for RDS, FM multiplex, and AM stereo
 - Special-purpose output ports: RDS and FM multiplex output, AM stereo output
 - Support for high-speed FM SD operation: the SD rise time is under 1 ms.
- Support for reception in all parts of the world
 - AM up-conversion technique adopted
 - Allows switching between AM RF tuned and detuned modes.
 - AM and FM RF tuning circuits are controlled by a D/A converter

Package Dimensions

unit: mm

3174-QFP80E



Specifications

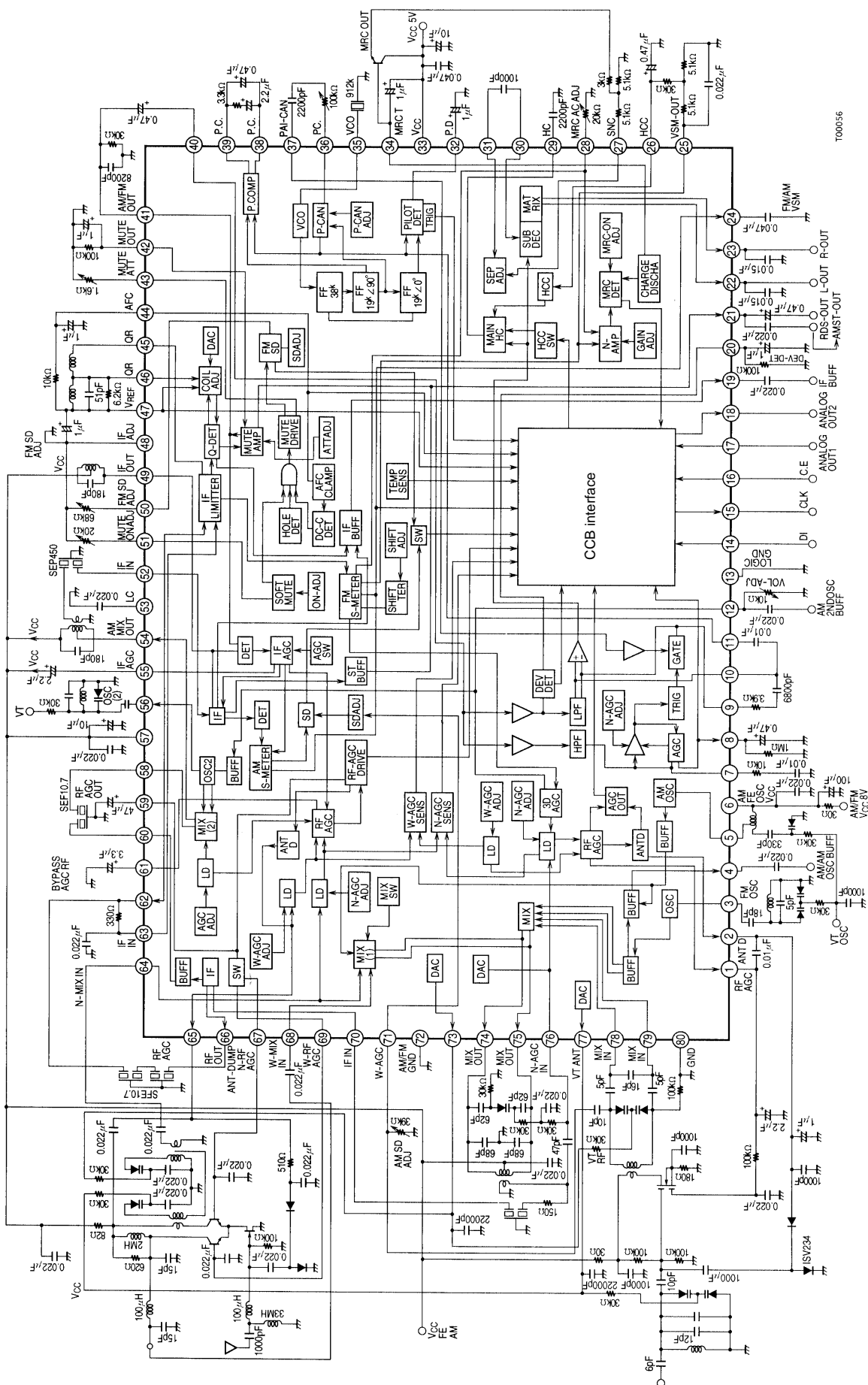
Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC\ max}$		9	V
Allowable power dissipation	$Pd\ max$		1.1	W
Operating temperature	T_{opr}		-40 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +150	$^\circ\text{C}$

Operating Conditions at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CCH}		8.5	V
	V_{CCL}		5	V
Operating voltage range	V_{CCHOP}		7.5 to 9.0	V
	V_{CCLOP}		4.5 to 5.5	V

Sample Application Circuit



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